

## Appendix A

### Demonstration that Connecticut's Nonattainment New Source Review State Implementation Plan Satisfies the Requirements for Implementation of the 2008 Ozone National Ambient Air Quality Standards.

Connecticut's Nonattainment New Source Review (NNSR) requirements are contained in the Regulations of Connecticut State Agencies (RCSA) sections 22a-174-1 and 22a-174-3a and these sections were last approved by EPA on February 27, 2003 [68 FR 9011]. These sections contain the necessary definitions and general New Source Review requirements. Specific NNSR requirements are contained in subsection (l) of RCSA 22a-174-3a.

The following table contains the NNSR requirements for State Implementation Plans (SIP) to be considered satisfactory for the implementation of the 2008 Ozone National Ambient Air Quality Standards (NAAQS). The federal requirements are listed in the left hand column of the table. The right hand column shows how Connecticut satisfies federal requirements.

Currently designated as "moderate" nonattainment for ozone by federal rule for the 2008 ozone standard, Connecticut retains in its SIP its NNSR rules resulting from more stringent classifications of "severe" and "serious" ozone nonattainment associated with earlier ozone standards. These NNSR rules are more stringent than would be required for an area newly designated as nonattainment for ozone with a classification of "moderate". Connecticut has always maintained these more stringent rules to assist in meeting attainment and to satisfy the Clean Air Act anti-backsliding requirements. Connecticut has incorporated these more stringent rules into its SIP and cannot change its SIP without public notice and EPA approval.

Note that, unless otherwise specified, Connecticut's regulations refer to the Code of Federal Regulations (CFR) in effect as of March 15, 2002.

<b>Major Source Thresholds for Ozone -- VOC and NOx.</b>	
<p><b>40 CFR 51.165(a)(1)(iv)(A)</b>            (l) Any stationary source of air pollutants that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant, except that lower emissions thresholds shall apply in areas subject to subpart 2, subpart 3, or subpart 4 of part D, title I of the Act, according to paragraphs (a)(1)(iv)(A)(l)(i) through (vi) of this section.            (i) 50 tons per year of volatile organic compounds in any serious ozone nonattainment area.            (ii) 50 tons per year of volatile organic compounds in an area within an ozone transport region, except for any severe or extreme ozone nonattainment area.            (iii) 25 tons per year of volatile</p>	<p>Connecticut sets the major source thresholds in its definition of "major stationary source" in 22a-174-1(63).</p> <p>(63) "Major stationary source" means "major stationary source" as defined in 40 CFR 51.165(a)(1)(iv), provided that:</p> <p>(A) A stationary source that emits or has the potential to emit twenty-five (25) tons per year of volatile organic compounds or nitrogen oxides as an ozone precursor in any severe ozone nonattainment area is a "major stationary source;" and</p> <p>(B) A stationary source that emits or has the potential to emit fifty (50) tons per year of volatile organic compounds or nitrogen oxides as an ozone precursor in any serious ozone nonattainment area is a "major stationary source."</p> <p>Where the serious and severe nonattainment areas are defined in the SIP as follows:</p>

<p>organic compounds in any severe ozone nonattainment area.</p> <p>(iv) 10 tons per year of volatile organic compounds in any extreme ozone nonattainment area.</p> <p>(2) For the purposes of applying the requirements of paragraph (a)(8) of this section to stationary sources of nitrogen oxides located in an ozone nonattainment area or in an ozone transport region, any stationary source which emits, or has the potential to emit, 100 tons per year or more of nitrogen oxides emissions, except that the emission thresholds in paragraphs (a)(1)(iv)(A)(2)(i) through (vi) of this section shall apply in areas subject to subpart 2 of part D, title I of the Act.</p> <p>(i) 100 tons per year or more of nitrogen oxides in any ozone nonattainment area classified as marginal or moderate.</p> <p>(ii) 100 tons per year or more of nitrogen oxides in any ozone nonattainment area classified as a transitional, submarginal, or incomplete or no data area, when such area is located in an ozone transport region.</p> <p>(iii) 100 tons per year or more of nitrogen oxides in any area designated under section 107(d) of the Act as attainment or unclassifiable for ozone that is located in an ozone transport region.</p> <p>(iv) 50 tons per year or more of nitrogen oxides in any serious nonattainment area for ozone.</p> <p>(v) 25 tons per year or more of nitrogen oxides in any severe nonattainment area for ozone.</p> <p>(vi) 10 tons per year or more of nitrogen oxides in any extreme nonattainment area for ozone; or</p>	<p>(103) "Serious non-attainment area for ozone" means all towns within the State of Connecticut, except those towns located in the severe non-attainment area for ozone.</p> <p>(104) "Severe non-attainment area for ozone" means the towns of Bethel, Bridgeport, Bridgewater, Brookfield, Danbury, Darien, Easton, Fairfield, Greenwich, Mon-roe, New Canaan, New Fairfield, New Milford, Newtown, Norwalk, Redding, Ridgefield, Sherman, Stamford, Stratford, Trumbull, Weston, Westport and Wilton.</p> <p>Currently the entire State of Connecticut is designated moderate nonattainment for ozone under the 2008 ozone standard. Under this designation, the federal rules, listed in the column to the left, require that the major source thresholds be set at 100 tons per year for pollutants other than VOC. The VOC threshold must be set at 50 tons per year because we are in the ozone transport region.</p> <p>Connecticut regulations set the major source threshold at 100 tons per year for pollutants other than NOx and VOC because Connecticut is not designated nonattainment for any pollutant other than ozone. The thresholds for NOx and VOC are set at 50 tons per year except in the "severe" area of the state where the thresholds are set at 25 tons per year. These more stringent thresholds were originally set based on nonattainment designations for the 1-hour ozone standard. The State retains the most stringent thresholds applicable to a nonattainment area based on its historic classifications of ozone nonattainment and thus meets the requirements of 40 CFR 51.165(a)(12).</p>
<p><b>Change Constitutes a Major Source by Itself.</b></p>	
<p>40CFR51.165(a)(1)(iv)(A)(3) Any physical change that would occur at a stationary source not qualifying under paragraphs (a)(1)(iv)(A)(1) or (2) of this section as a major stationary source, if the change would constitute a major stationary source by itself.</p>	<p>The definition of "major stationary source" in RCSA 22a-174-1(63) (see above) cites the 2002 federal rule at 40 CFR 51.165(a)(1)(iv). The 2002 definition contains language which is functionally identical to the current federal rule.</p> <p>From 40 CFR 51.165(a)(1)(iv) dated 2002:</p> <p>(A) <i>Major stationary source</i> means:</p> <p>(1) Any stationary source of air pollutants which emits, or has the potential to emit 100 tons per year or more of any pollutant subject to regulation under the Act, or</p> <p>(2) Any physical change that would occur at a stationary source not qualifying under paragraph (a)(1)(iv)(A)(1) as a major stationary source, if the change would constitute a major stationary source by itself.</p>

	Connecticut treats as a major source any modification which by itself meets the major source threshold.
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**Significant Net Emissions Increase of NOx is Significant for ozone.**

40CFR51.165(a)(1)(v)(E)  
 For the purpose of applying the requirements of (a)(8) of this section to modifications at major stationary sources of nitrogen oxides located in ozone nonattainment areas or in ozone transport regions, whether or not subject to subpart 2, part D, title I of the Act, any significant net emissions increase of nitrogen oxides is considered significant for ozone.

Table 3a(k)-1 of RCSA 22a-174-3a sets forth the significance thresholds for determining major modifications. The threshold for NOx, as a precursor for ozone, is included in the table below.

Table 3a(k)-1 Significant Emission Rate Thresholds

Air Pollutant	Emission Levels(Tons per Year)
***	
Nitrogen Oxides (as an ozone precursor)	25
Nitrogen Oxides (PM <sub>2.5</sub> precursor)	40
Nitrogen Oxides (NOx National Ambient Air Quality Standard)	40
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Connecticut has set the significance threshold for determining a major modification for NOx as an ozone precursor to 25 tons per year. This is the same threshold as is required for VOC in areas designated as serious or severe for ozone nonattainment and therefore meets the requirements of 40 CFR 51.165(a)(12).

This threshold stems from prior nonattainment designations for the 1-hour standard and is more stringent than the 40 tons per year which would be required of an area which had been designated as moderate nonattainment.

Connecticut retains the 25 ton per year threshold for determining a major modification for NOx as an ozone precursor.

**Any Emission Change of VOC in Extreme Area Triggers Nonattainment NSR.**

40CFR51.165(a)(1)(v)(F)  
 Any physical change in, or change in the method of operation of, a major stationary source of volatile organic compounds that results in any increase in emissions of volatile organic compounds from any discrete operation, emissions unit, or other pollutant emitting activity at the source shall be considered a significant net emissions increase and a major modification for ozone, if the major stationary source is located in an extreme ozone nonattainment area that is subject to subpart 2, part D, title I of the Act.

Not Applicable.  
  
 No areas in Connecticut were ever classified as extreme nonattainment for ozone.

**Significant Emissions Rates for VOC and NOx as Ozone Precursors**

<p>40CFR51.165(a)(1) (x)(A) <i>Significant</i> means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates: <b>Pollutant Emission Rate</b> *** Ozone: 40 tpy of volatile organic compounds or NOx *** (B) Notwithstanding the significant emissions rate for ozone in paragraph (a)(1)(x)(A) of this section, significant means, in reference to an emissions increase or a net emissions increase, any increase in actual emissions of volatile organic compounds that would result from any physical change in, or change in the method of operation of, a major stationary source locating in a serious or severe ozone nonattainment area that is subject to subpart 2, part D, title I of the Act, if such emissions increase of volatile organic compounds exceeds 25 tons per year. (C) For the purposes of applying the requirements of paragraph (a)(8) of this section to modifications at major stationary sources of nitrogen oxides located in an ozone nonattainment area or in an ozone transport region, the significant emission rates and other requirements for volatile organic compounds in paragraphs (a)(1)(x)(A), (B), and (E) of this section shall apply to nitrogen oxides emissions. *** (E) Notwithstanding the significant emissions rates for ozone under paragraphs (a)(1)(x)(A) and (B) of this section, any increase in actual emissions of volatile organic compounds from any emissions unit at a major stationary source of volatile organic compounds located in an extreme ozone nonattainment area that is subject to subpart 2, part D, title I of the Act shall be considered a significant net emissions increase. * * * * *</p>	<p>RCSA 22a-174-1(61) refers to the 2002 federal definition of significant at 40CFR51.166(b)(23)(i) and establishes the significance threshold for VOC and NOx at 25 tpy.</p> <p>RCSA 22a-174-1(61) "Major modification" means "major modification" as defined in 40 CFR 51.165(a)(1)(v), provided that, for the purposes of this definition, the term "significant" has the same meaning as in 40 CFR 51.166(b)(23)(i) and:</p> <p>(A) The values for nitrogen oxides as an ozone precursor and volatile organic compounds are each twenty-five (25) tons per year, and (B) Asbestos, beryllium and vinyl chloride are excluded.</p> <p>From the 2002 version of 40CFR51.166(b)(23)(i):</p> <p><i>Significant</i> means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates: POLLUTANT AND EMISSIONS RATE Carbon monoxide: 100 tons per year (tpy) Nitrogen oxides: 40 tpy Sulfur dioxide: 40 tpy Particulate matter: 25 tpy of particulate matter emissions. 15 tpy of PM10 emissions. Ozone: 40 tpy of volatile organic compounds Lead: 0.6 tpy *** The threshold to determine if a significant net emission increase of NOx or VOC will trigger a major modification is 25 tons per year for each pollutant. See above for further discussion.</p>
<b>Provisions for Emissions Reduction Credits.</b>	
<p>40CFR51.165(a)(3)(ii)(C) (I) Emissions reductions achieved by shutting down an existing emission unit or curtailing production or operating hours may be generally credited for offsets if they meet the</p>	<p>RCSA 22a-174-3a(l) (4) and (5) contain the State's requirements for Emission Reduction Credits.</p>

<p>requirements in paragraphs (a)(3)(ii)(C)(I)(i) through (ii) of this section.</p> <p>(i) Such reductions are surplus, permanent, quantifiable, and federally enforceable.</p> <p>(ii) The shutdown or curtailment occurred after the last day of the base year for the SIP planning process. For purposes of this paragraph, a reviewing authority may choose to consider a prior shutdown or curtailment to have occurred after the last day of the base year if the projected emissions inventory used to develop the attainment demonstration explicitly includes the emissions from such previously shutdown or curtailed emission units. However, in no event may credit be given for shutdowns that occurred before August 7, 1977.</p> <p>(2) Emissions reductions achieved by shutting down an existing emissions unit or curtailing production or operating hours and that do not meet the requirements in paragraph (a)(3)(ii)(C)(I)(ii) of this section may be generally credited only if:</p> <p>(i) The shutdown or curtailment occurred on or after the date the construction permit application is filed; or</p> <p>(ii) The applicant can establish that the proposed new emissions unit is a replacement for the shutdown or curtailed emissions unit, and the emissions reductions achieved by the shutdown or curtailment met the requirements of paragraph (a)(3)(ii)(C)(I)(i) of this section.</p>	<p>RCSA 22a-174-3a(l)(5) requires that Emission Reduction Credits be real, quantifiable, surplus, permanent and enforceable:</p> <p>(5) The owner or operator of the subject source or modification shall secure certified emission reduction credits before using them. Continuous emission reduction credits shall be secured and retired prior to their use. Emission reduction credits shall be:</p> <p>(A) Created and used in accordance with 40 CFR 51;</p> <p>(B) Real, that is, resulting in a reduction of actual emissions, net of any consequential increase in actual emissions resulting from shifting demand. The emission reductions shall be measured, recorded and reported to the commissioner;</p> <p>(C) Quantifiable, based on either stack testing approved by the commissioner in writing, conducted pursuant to an appropriate, reliable, and replicable protocol approved by the commissioner, or continuous emissions monitoring certified by the commissioner. Such quantification shall be in terms of the rate and total mass amount of non-attainment pollutant emission reduction;</p> <p>(D) Surplus, not required by any Connecticut General Statute or regulation adopted thereunder, or mandated by the State Implementation Plan, and not currently relied upon for any attainment plan, any Reasonable Further Progress plan or milestone demonstration;</p> <p>(E) Permanent, in that at the source of the emission reduction, the emission reduction system shall be in place and operating, and an appropriate record keeping system is maintained to collect and record the data required to verify and quantify such emissions reductions; and</p> <p>(F) Enforceable and approved by the commissioner in writing after the submission to the commissioner of documents satisfactory to the commissioner or incorporated into a permit as a restriction on emissions.</p> <p>Further restrictions on creating Emission Reduction Credits are contained in RCSA 22a-174-3a(l)(4).</p> <p>(4) Offsetting emission reductions or Emission Reduction Credits.</p> <p>(A) Except as provided in subdivision (8)(B) of this subsection, prior to commencing operation pursuant to a permit issued under this section, the owner or operator of the subject source or modification shall:</p> <p>(i) reduce actual emissions from other stationary sources on such premises, sufficient to offset the allowable emissions increase for each individual non-attainment air pollutant which is the subject of the application, or</p> <p>(ii) obtain certified emission reduction credits in accordance with subdivision (5) of this subsection, which credits are sufficient to offset the allowable emissions increase for each individual non-attainment air pollutant; and</p> <p>(B) The commissioner shall not grant a permit to an owner or operator of the subject source or modification unless the owner or operator demonstrates that internal offset or certified emission reduction credits pursuant to subparagraph (A) of this subdivision:</p> <p>(i) have occurred preceding the submission of such application and prior to the date that the subject source or modification becomes operational and begins to emit any air pollutant. The commissioner may consider a time period beginning no earlier than November 15, 1990,</p> <p>(ii) are not otherwise required by any of the following: the Act; a federally enforceable permit or order; the State Implementation Plan; or the regulations or statutes in effect when such application is filed,</p>
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(iii) will be incorporated into a permit or order of the commissioner and would be federally enforceable,

(iv) will create a net air quality benefit in conjunction with the proposed emissions increase. In determining whether such a net air quality benefit would be created, the commissioner may consider emissions on an hourly, daily, seasonal or annual basis. For carbon monoxide or particulate matter (total suspended particulate, PM<sub>2.5</sub> and PM<sub>10</sub>), the net air quality benefits shall be determined by the use of atmospheric modeling procedures approved by the commissioner and the Administrator in writing. Upon the request of the commissioner, the owner or operator shall make and submit to the commissioner, a net air quality benefit determination for each air pollutant. Such determination shall include, but not be limited to, all increases and decreases of emissions from stationary sources at any premises providing the offsetting emission reductions,

(v) shall be based on the pounds per hour of potential emissions increase from the subject source or modification. The commissioner may consider other more representative periods, including, but not limited to, tons per year or pounds per day,

(vi) are identified in an emissions inventory maintained by the commissioner or otherwise approved in writing by the commissioner,

(vii) are of the same non-attainment air pollutant of which the owner or operator proposes to increase. Reductions of any exempt volatile organic compound listed in Table 1-3 of section 22a-174-1 of the Regulations of Connecticut State Agencies or those listed in 40 CFR 51.100 shall not be used to offset proposed increases emissions of non-exempt volatile organic compounds,

(viii) occurred at either: one or more stationary sources in the same non-attainment area or stationary sources in another non-attainment area if, pursuant to the Act, such area has an equal or higher non-attainment classification than the area in which the proposed activity would take place, and if emissions from such other non-attainment area contribute to a violation of a National Ambient Air Quality Standard in the non-attainment area in which the proposed activity would take place,

(ix) for the applicable non-attainment air pollutant, shall be from reductions in actual emissions, and

(x) offset actual emissions at a ratio greater than one to one, as determined by the commissioner. In addition, the owner or operator shall offset emission increases of allowable emissions at a ratio, for volatile organic compounds or nitrogen oxides, of at least: 1.3 to 1 in any severe non-attainment area for ozone, and 1.2 to 1 in any serious non-attainment area for ozone.

These provisions are applicable to any source which meets the applicability requirements of RCSA 22a-174-3a(f).

**(f) Permit Requirements For Non-attainment Areas**

(1) Applicability. In accordance with subsection (a) of this section, the provisions of this subsection shall apply to the owner or operator of:

(A) Any new major stationary source that:

(i) Is or will be constructed in a designated nonattainment area; and

(ii) Is or will be major for the pollutant for which the area is designated as nonattainment;

(B) Any major modification that:

(i) Occurs at a source that is major for the pollutant for which the area is designated as nonattainment; and

(ii) Is or will be major for the pollutant for which the area is designated as nonattainment; or

(C) Any new major stationary source or major modification that is located in an attainment area or unclassifiable area, where the allowable emissions of any air pollutant would cause or exacerbate a violation of a National Ambient Air Quality Standard in an adjacent nonattainment area. Allowable emissions of any such air

	<p>pollutant shall be deemed not to cause or contribute to a violation of a National Ambient Air Quality Standard provided that such emissions result in impacts that are less than the levels set forth in Table 3a(i)-1 in subsection (i) of this section.</p> <p>Creation and use of offsets are reviewed to assure they follow the above regulations.</p> <p>Additionally, RCSA 22a-174-3a(j)(7) requires that public notice made prior to permit issuance include a statement concerning the proposal to offset the potential emissions increase from the subject source or modification.</p>
<p><b>Requirements for VOC apply to NOx as Ozone Precursor.</b></p>	
<p>40CFR51.165(a)(8) The plan shall provide that the requirements of this section applicable to major stationary sources and major modifications of volatile organic compounds shall apply to nitrogen oxides emissions from major stationary sources and major modifications of nitrogen oxides in an ozone transport region or in any ozone nonattainment area, except in ozone nonattainment areas or in portions of an ozone transport region where the Administrator has granted a NOx waiver applying the standards set forth under section 182(f) of the Act and the waiver continues to apply.</p>	<p>In addition to the above, the following definition at RCSA 22a-174-1(78) assures that both VOC and NOx are treated as nonattainment air pollutants with regard to ozone.</p> <p>(78) "Non-attainment air pollutant" means the particular air pollutant for which an area is designated as a non-attainment area, except that volatile organic compounds and nitrogen oxides are non-attainment air pollutants for ozone non-attainment areas.</p>
<p><b>Offset Ratios for VOC and NOx for Ozone Nonattainment Areas.</b></p>	
<p>40CFR51.165(9)(ii) The plan shall require that in meeting the emissions offset requirements of paragraph (a)(3) of this section for ozone nonattainment areas that are subject to subpart 2, part D, title I of the Act, the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be as follows: (A) In any marginal nonattainment area for ozone—at least 1.1:1; (B) In any moderate nonattainment area for ozone—at least 1.15:1; (C) In any serious nonattainment area for ozone—at least 1.2:1; (D) In any severe nonattainment area for ozone—at least 1.3:1 (except that the ratio may be at least 1.2:1 if the approved plan also requires all existing major sources in such nonattainment area to use BACT for the control of VOC); and (E) In any extreme nonattainment area for ozone—at least 1.5:1 (except that the ratio may be at least 1.2:1 if the approved plan also requires all existing major sources in such nonattainment</p>	<p>RCSA 22a-174-3a(j)(4)(B)(x) sets the required offset ratios.</p> <p>(x) offset actual emissions at a ratio greater than one to one, as determined by the commissioner. In addition, the owner or operator shall offset emission increases of allowable emissions at a ratio, for volatile organic compounds or nitrogen oxides, of at least: 1.3 to 1 in any severe non-attainment area for ozone, and 1.2 to 1 in any serious non-attainment area for ozone.</p> <p>Connecticut's current designation under the 2008 ozone standard of moderate nonattainment for ozone in an ozone transport region requires that the offsets for VOC and NOx be set at a ratio of 1.15 to 1.</p> <p>Connecticut retains more stringent offset requirements from prior designations at higher nonattainment classifications under earlier ozone standards and thus meets the requirements of 40 CFR 51.165(a)(12).</p>

<p>area to use BACT for the control of VOC); and</p> <p>(iii) Notwithstanding the requirements of paragraph (a)(9)(ii) of this section for meeting the requirements of paragraph (a)(3) of this section, the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be at least 1.15:1 for all areas within an ozone transport region that is subject to subpart 2, part D, title I of the Act, except for serious, severe, and extreme ozone nonattainment areas that are subject to subpart 2, part D, title I of the Act.</p> <p>(iv) The plan shall require that in meeting the emissions offset requirements of paragraph (a)(3) of this section for ozone nonattainment areas that are subject to subpart 1, part D, title I of the Act (but are not subject to subpart 2, part D, title I of the Act, including 8-hour ozone nonattainment areas subject to 40 CFR 51.902(b)), the ratio of total actual emissions reductions of VOC to the emissions increase of VOC shall be at least 1:1.</p>	
<p><b>Anti-backsliding provision(s), where applicable.</b></p>	
<p>40 CFR 51.165(a)(12)</p> <p>The plan shall require that in any area designated nonattainment for the 2008 ozone NAAQS and designated nonattainment for the 1997 ozone NAAQS on April 6, 2015 the requirements of this section applicable to major stationary sources and major modifications of ozone shall include the anti-backsliding requirements contained at §51.1105.</p>	<p>As demonstrated above Connecticut retains its NNSR provisions which were in effect under more stringent designations of severe and serious nonattainment for the 1-hour ozone NAAQS which pre-dates the 1997 8-hour NAAQS.</p>